What is claimed is:

1. A method of optical wavelength allocation in an photonic network comprising the steps of:

generating a first plurality of optical wavelengths at a first location in the network;

selecting a predetermined one wavelength of the first plurality of optical wavelengths;

transmitting the predetermined one wavelength to a second location; and

generating a second plurality of optical wavelengths at a second location in the network with reference to the predetermined one wavelength.

2. A method as claimed in claim 1 further comprising the steps of forming a second group of wavelengths by grouping selected second wavelengths; and

transmitting the second group of wavelengths to a third location in the network.

3. A method as claimed in claim 2 further comprising the steps of modulating one wavelength of the second group of wavelengths at the third location and passing the modulated one of the second group of wavelengths to the first location in the network.

4. A method as claimed in claim 2 further comprising the steps of modulating one wavelength of the second group of wavelengths at the third location and passing the modulated one of the second group of wavelengths to a fourth location in the network.

5. A method as claimed in claim 2 further comprising the step of modulating a wavelength of the first group of wavelengths at the first location.

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6. Apparatus for optical wavelength allocation in an photonic network comprising:

means for generating a first plurality of optical wavelengths at a first location in the network;

means for selecting a predetermined one wavelength of the first plurality of optical wavelengths;

means for transmitting the predetermined one wavelength to a second location for generating a second plurality of optical wavelengths at a second location in the network with reference to the predetermined one wavelength.

7. Apparatus as claimed in claim 6 further comprising means for forming a second group of wavelengths by grouping selected second wavelengths; and

transmitting the second group of wavelengths to a third location in the network.

8. Apparatus as claimed in claim 7 further comprising means for modulating one wavelength of the second group of wavelengths at the third location and means for passing the modulated one of the second group of wavelengths to the first location in the network.

9. Apparatus as claimed in claim 7 further comprising means for modulating one wavelength of the second group of wavelengths at the third location and passing the modulated one of the second group of wavelengths to a fourth location in the network.

10. A method of optical wavelength allocation in a photonic network comprising the steps of:

generating a first plurality of optical wavelengths at a first location in the network; and

generating a second plurality of optical wavelengths at a second location in the network.

11. A method as claimed in claim 10 further comprising the steps of forming a second group of wavelengths by grouping selected second wavelengths; and

transmitting the second group of wavelengths to a third location in the network.

12. A method as claimed in claim 11 further comprising the steps of modulating one wavelength of the second group of wavelengths at the third location and passing the modulated one of the group of wavelengths to the first location in the network.

13. A method as claimed in claim 2 further comprising the steps of modulating one wavelength of the second group of wavelengths at the third location and passing the modulated one of the second group of wavelengths to a fourth location in the network.

14. A method as claimed in claim 2 further comprising the step of modulating a wavelength of the first group of wavelengths at the first location.

15. Apparatus for optical wavelength allocation in an photonic network comprising:

means for generating a first plurality of optical wavelengths at a first location in the network; and

means for generating a second plurality of optical wavelengths at a second location in the network.

16. Apparatus as claimed in claim 15 further comprising means for forming a second group of wavelengths by grouping selected second wavelengths; and

for transmitting the second group of wavelengths to a third location in the network.

17. Apparatus as claimed in claim 16 further comprising means for modulating one wavelength of the second group of wavelengths at the third location and means for passing the modulated one wavelength of the second group of wavelengths to the first location in the network.

18. Apparatus as claimed in claim 16 further comprising means for modulating one wavelength of the second group of wavelengths at the third location and passing the modulated one wavelength of the second the group of wavelengths to a fourth location in the network.

19. Apparatus as claimed in claim 16 further comprising means for modulating a wavelength of the first group of wavelengths at the first location.

20. A method of optical wavelength allocation in an photonic network comprising the steps of:

generating a plurality of optical wavelengths at a first location in the network;

forming a group of wavelengths by grouping selected wavelengths; and

transmitting the group of wavelengths to a second location in the network.

21. A method as claimed in claim 20 further comprising the steps of modulating one of the group of wavelengths at the second location and passing the group of wavelengths to a third location in the network.

22. A method as claimed in claim 21 further comprising the step of modulating a second of the group of wavelengths at the third location.

23. A method as claimed in claim 22 further comprising the step of passing the modulated second of the group of wavelengths back to the second location thereby establishing a two way communications path using two optical wavelengths between the second and third locations.

24. Apparatus for optical wavelength allocation in an photonic network comprising:

means for generating a plurality of optical wavelengths at a first location in the network;

means for forming a group of wavelengths by grouping selected wavelengths; and

means for transmitting the group of wavelengths to a second location in the network.

25. Apparatus as claimed in claim 24 further comprising means for modulating one of the group of wavelengths at the second location and for passing the group of wavelengths to a third location in the network.

26. Apparatus as claimed in claim 25 further comprising means for modulating a second of the group of wavelengths at the third location.

27. Apparatus as claimed in claim 26 further comprising means for passing the modulated second of the group of wavelengths back to the second location whereby a two way communications path using two optical wavelengths between the second and third locations is established.

28. Apparatus as claimed in claim 24 wherein the means for generating a plurality of optical wavelengths includes a muliple lambda source.

29. Apparatus as claimed in claimed 28 wherein the optical wavelengths conform to a dense wavelength distributed multiplexing scheme.

30. Apparatus as claimed in claim 24 wherein the means for generating a plurality of optical wavelengths includes wavelength distributed multiplexers.

31. Apparatus as claimed in claim 30 wherein the wavelength distributed multipliers are coarse relative to a dense wavelength distributed multiplexing scheme.